

CLAIMS

1. A hermetic compressor including: a motor element within a hermetic vessel; a compression element driven by said motor element; and a suction muffler made of synthetic resin which is linked to said compression element, wherein at least a part of a casing of said suction muffler is foam-molded.
2. The hermetic compressor according to claim 1, wherein a bubble diameter obtained by said foam-molding is $50\mu\text{m}$ or less.
3. The hermetic compressor according to claim 1, wherein a material of said foam-molding is crystal synthetic resin.
4. The hermetic compressor according to claim 1, wherein a skin layer in which a bubble does not exist substantially is formed on a surface of said foam-molding.
5. The hermetic compressor according to claim 4, wherein a thickness of said skin layer is 30% or less of a plate thickness in the thinnest portion.

6. The hermetic compressor according to claim 1, wherein a foaming magnification of said foam-molding is 1.2 times or more.

5

7. The hermetic compressor according to claim 1, wherein among a plurality of walls constituting said casing, a plate thickness of the wall in which the maximum projection area is obtained is thicker than plate thicknesses of the other plate thicknesses.

10

8. The hermetic compressor according to claim 1, wherein said casing is produced by combining at least two parts, and said two parts are separated and divided in a direction substantially vertical to the wall in which the maximum projection area of said casing is obtained.

15

9. The hermetic compressor according to claim 1, wherein plate thicknesses of a corner of said casing and a portion having a high curvature are relatively larger than the other portions.

20

10. The hermetic compressor according to claim 1, wherein said suction muffler includes a sound

25

attenuation space formed inside said casing, a first linkage path to link said compression element and said sound attenuation space, and a second linkage path to link an inner portion of said hermetic vessel and said sound attenuation space, and

wherein a wall of said casing, which is close to at least one of said motor element, said compression element, an open end within said sound attenuation space of said first linkage path, and an open end within said sound attenuation space of said second linkage path is designed so as to have at least one of a configuration that it is thicker than the other walls of said casing and a configuration that it is higher in foaming magnification.

11. The hermetic compressor according to claim 1, wherein a lubricating oil is stored in said hermetic vessel, and at least one of walls of said casing of said suction muffler to which said lubricating oil is supplied is designed so as to have at least one of a configuration that it is thicker than the other walls of said casing and a configuration that it is higher in foaming magnification.

12. The hermetic compressor according to claim 1, wherein the casing of said suction muffler has a suction muffler body and a suction muffler cover, and wherein a bonding portion between said suction muffler body and said suction muffler cover has a foaming magnification which is relatively lower as compared with portions except said bonding portion, or it is not foam-molded.

10

13. The hermetic compressor according to claim 1, wherein the linkage path to link the inner portion of said hermetic vessel and the sound attenuation space of said suction muffler is formed integrally with the farthest element from the motor element, among a plurality of elements constituting the casing of said suction muffler.

15

14. The hermetic compressor according to claim 1, wherein a part of the casing of said suction muffler is interposed between a cylinder head and a valve plate which constitute said compression element, and said interposed part of said casing has a relatively low foaming magnification or it is not foam-molded.

20

25

15. The hermetic compressor according to claim 1, wherein a part of the casing of said suction muffler is interposed between a cylinder head and a valve plate which constitute said compression element, and the thickness of said interposed part of said casing is thicker than the other portions.

16. The hermetic compressor according to claim 1, wherein said motor element is inverter-driven at a rotation number including a rotation number less than a commercial power supply frequency.

17. The hermetic compressor according to claim 16, wherein said rotation number is 20r/sec or less.

18. The hermetic compressor according to claim 1, wherein a refrigerant gas compressed by said compression element is R600a.

19. A manufacturing method of a suction muffler, which foam-molds at least a part of a casing of a suction muffler made of synthetic resin for a hermetic compressor, wherein in said molding course, a core-back is used to move a part of a die, enlarge a cavity and make a plate thickness

thicker.

20. A manufacturing method of a suction muffler, which foam-molds at least a part of a casing of a suction muffler made of synthetic resin for a hermetic compressor, wherein a section area of a gate serving as a resin supplying portion to cavities inside a die is equal to or greater than 70% of a square of a plate thickness of said casing.

21. A manufacturing method of a suction muffler, which foam-molds at least a part of a casing of a suction muffler made of synthetic resin for a hermetic compressor, wherein two or more gates serving as resin supplying portions to cavities inside a die are installed for at least one unit.